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March 14, 2017

LFC INVESTMENT REPORT FOR THE QUARTER ENDING DECEMBER 31, 2016

This report details the comparative investment performance of the three investment agencies: the Educational Retirement Board (ERB), the Public Employees Retirement Association (PERA), and the State Investment Council (SIC) which manages the land grant permanent fund (LGPF) and the severance tax permanent fund (STPF). This report derives agency performance and market environment information from the investment performance reports submitted by PERA, ERB, and SIC for the quarter ending December 31, 2016. Information from the Wilshire Trust Universe Comparison Service (TUCS) report is also included.

INVESTMENT PERFORMANCE HIGHLIGHTS

- All funds showed positive year-over-year growth when comparing calendar year 2016 to calendar year 2015.
- In the last year, the aggregate value of the state's combined investment holdings for the pension and permanent funds grew nearly \$2 billion to end the year at \$45.8 billion. ERB and PERA's fund balances grew 5.2 percent and 3.4 percent, respectively, and the aggregate value of the permanent funds managed by SIC grew 5 percent.
- This quarter, PERA and SIC's returns exceeded their one-year and five-year internal benchmarks and ERB's returns exceeded its five-year internal benchmark. All fund's five-year returns exceeded their long-term targets, which are 7.75 percent (ERB), 7.25 percent (PERA), 7 percent (LGPF) and 6.75 percent (STPF).
- The best-performing asset classes relative to return targets for the year were U.S. equities (SIC & PERA) and real assets (ERB).
- The permanent funds performed particularly well this quarter, based on percentile rankings in the Wilshire Trust Universe Comparison Service (TUCS) peer universe for public funds greater than \$1 billion. The permanent funds performed well above the median for the latest quarter but fell below the median for all other periods. ERB ranked well above the 50th percentile for one- and three-year periods but performed below the median for the other periods reported. The PERA fund performed below the median for all periods reported.

MARKET ENVIRONMENT

Following the U.S. election in November, U.S. stocks and 10-year Treasury yields pushed upward. The Federal Reserve Bank's much anticipated decision to raise interest rates by 0.25 percent in December had little effect on the market. The stock market, as represented by the Wilshire 5000 Total Market Index,SM completed its fifth straight quarterly gain and its eighth straight annual gain. Strength in consumer spending largely contributed to growth in real GDP, and business investment was up slightly. Also contributing to growth was a significant drop in the U.S. export deficit. Consumer price increases quickened in the latter part of the year, and the 10-year breakeven inflation rate ended the quarter at 1.95 percent, up from 1.6 percent last quarter. Job growth slowed in 2016 compared to the previous year; however, the unemployment rate lowered to 4.6 percent.

Market Environment as of December 31, 2016

Index Returns (%)	Quarter	1 Year	5 Years	10 Years
S&P 500	3.82	11.96	14.66	6.95
Wilshire 5000	4.54	13.37	14.71	7.17
Dow Jones Industrial	8.66	16.50	12.91	7.53
Citigroup Broad (BMI)	-3.03	2.66	-0.99	4.43
MSCI EAFE (Net)	-0.71	1.00	6.53	0.75
Barclays Govt/Credit	-3.39	3.05	2.29	4.40

The table above provides relevant performance benchmarks. Standard & Poor's 500 (S&P 500) and the Wilshire 5000 are seen as leading indicators of the U.S. equities market and are a common benchmark for the U.S. stock market. Based on these indicators, stock market returns were around 4 percent this quarter and about 12 percent to 13 percent for calendar year 2016. The Dow Jones Industrial Average is a price-weighted average of 30 significant stocks traded on the New York Stock Exchange and NASDAQ, and it includes companies such as General Electric, Exxon Mobil, and Microsoft. The Citigroup Broad Market Index (BMI) Global and the Morgan Stanley Capital International (MSCI) EAFE Index both provide a broad measure of the international equities market. The Barclays Capital U.S. Government/Credit Bond Index measures the performance of U.S. dollar denominated U.S. Treasuries, government-related and investment grade U.S. corporate securities that have a remaining maturity of greater than one-year.

PERFORMANCE VS. INTERNAL BENCHMARKS

Investment performance is often best considered in terms of full market cycles, which can be defined as a period of full bull-bear-bull periods generally lasting 4 to 5 years.¹ Due to the longer-term duration of a full market cycle, short-term performance (e.g. quarterly or one-year)

¹ Generally, full market cycles are a peak-to-peak period typically containing a price decline of at least 20 percent over at least a two-month period from the previous market peak, followed by a rebound that establishes a new, higher peak.

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is often not fully indicative of a fund's overall performance, as the focus should generally be on longer-term returns.

Quarterly returns on the state's investment funds included PERA's investment portfolio at 0 percent, ERB at 0.8 percent, LGPF at 1.4 percent, and STPF at 1.8 percent. Returns for the permanent funds both exceeded their interim policy benchmark for the quarter. As mentioned above, more attention should be paid to the investment funds' long-term performance. Each agency nearly met or exceeded their five-year interim return targets and long-term targets, which are 7.25 percent (PERA), 7.75 percent (ERB), 7 percent (LGPF) and 6.75 percent (STPF).

Returns as of December 31, 2016 (Net of Fees)

Returns (%)	<u>PERA</u>		<u>ERB</u>		<u>LGPF</u>		<u>STPF</u>	
	<u>Fund</u>	<u>Policy Index</u>	<u>Fund</u>	<u>Policy Index</u>	<u>Fund</u>	<u>Policy Index</u>	<u>Fund</u>	<u>Policy Index</u>
Quarter	0.0	0.9	0.8	1.1	1.4	1.1	1.8	1.2
1-Year	7.3	8.7	8.5	9.1	7.4	7.3	7.4	7.3
3-Year	4.0	4.8	5.8	5.0	4.6	5.2	4.7	5.3
5-Year	8.3	8.1	8.5	7.6	8.7	8.6	8.5	8.6
10-Year	4.0	4.9	5.1	4.4	4.9	4.5	4.3	4.5

FUND ASSET VALUES

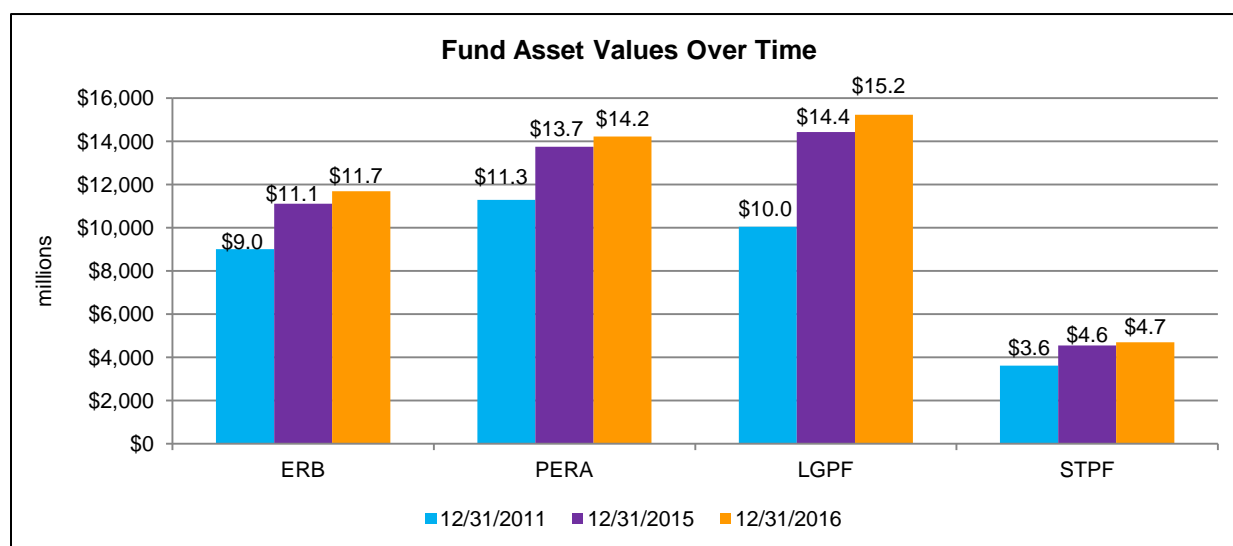
Fund balances have grown over the year, as shown in the table below. The land grant permanent fund, which is the largest of the four funds, also experienced the most growth, adding \$803 million, or 5.6 percent, to the fund balance over the course of the year. ERB's asset values had the second largest growth in the last year, adding \$572.8 million, or 5.2 percent, to its fund balances. All amounts displayed below are shown net-of-fees. As shown in the graph below, LGPF also experienced the most growth over the past five years, growing in value by \$5.2 billion, or 51.7 percent. The other funds have also shown significant growth in the last five years, with ERB, PERA, and STPF growing 29.9 percent, 25.9 percent, and 29.6 percent, respectively.

Current Asset Values* (millions) For One-Year Period Ending December 31, 2016

	<u>ERB</u>	<u>PERA</u>	<u>LGPF</u>	<u>STPF</u>	<u>TOTAL</u>
Current Asset Value	\$11,683.0	\$14,211.3	\$15,224.7	\$4,687.3	\$45,806.3
<u>Annual Change</u>					
Ending Asset Value (12/31/2015)	\$11,110.2	\$13,745.6	\$14,421.9	\$4,550.1	\$43,827.8
Value Change – Year Over Year	\$572.8	\$465.7	\$802.7	\$137.2	\$1,978.5
% Change – Year Over Year	5.2%	3.4%	5.6%	3.0%	4.5%

*Net of Fees

It should be noted, as pension funds, PERA and ERB's fund values reflect benefit payouts, which must be made regardless of the amount of contributions received. Distributions from the permanent funds are based on a formula using revenues and contributions. Generally, due to the differences in liabilities, the permanent funds will tend to have a larger percent change in fund asset values than the pension funds.



ACTUAL VS. TARGET ASSET ALLOCATIONS

The target asset allocations shown below represent the investment funds' portfolio structure, detailing how investments are made. Each of the investment agencies focus on a diversified portfolio, spreading out investments across a variety of asset classes. The table shows the current actual asset allocation for the period ending December 31, 2016, compared with the agencies' policy targets.

Fund Asset Allocation Detail, Quarter Ending December 31, 2016

	ERB		PERA		LGPF		STPF	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
US Equity	20.1%	20.0%	12.6%	-	29%	26%	28%	26%
International Equity	14.0%	15.0%	11.3%	-	15%	18%	17%	18%
Global Equity*	-	-	18.9%	32.6%	-	-	-	-
Fixed Income	29.6%	28.0%	32.1%	33.1%	22%	23%	20%	22%
Total Alternatives	34.2%	36.0%	21.5%	33.9%	32%	32%	35%	33%
Private Equity	10.9%	11.0%	5.8%	8.7%	9%	9%	11%	10%
Real Estate/Real Assets	13.2%	15.0%	10.9%	19.0%	19%	18%	18%	18%
Absolute Return	-	-	4.7%	6.2%	4%	5%	6%	5%
ETI**	-	-	-	-	-	-	1%	0%
Global Asset Allocation	5.0%	5.0%	-	-	-	-	-	-
Risk Parity	5.1%	5.0%	-	-	-	-	-	-
Cash Equivalents	2.1%	1.0%	3.6%	0.4%	1%	1%	1%	1%
Total Fund %	100%	100%	100%	100%	100%	100%	100%	100%

*Unlike the other investment funds, PERA's global equity asset class includes domestic and international public securities, global low volatility equity, hedged equity, and private equity.

**Economically targeted investments

ASSET CLASS PERFORMANCE

While U.S. equities posted only modest gains this quarter (returns of 3.8 percent according to S&P 500), it was the best source of return for LGPF, earning just under 12 percent net of fees. Similarly, the biggest contributor to PERA's quarter investment gains was its domestic small and mid-cap equity portfolio. This approximately \$400 million composite returned 8.5 percent for the quarter and over 10 percent in the month of November. ERB's real assets category performed best against its benchmark, returning 10.5 percent versus a 6.2 percent benchmark.

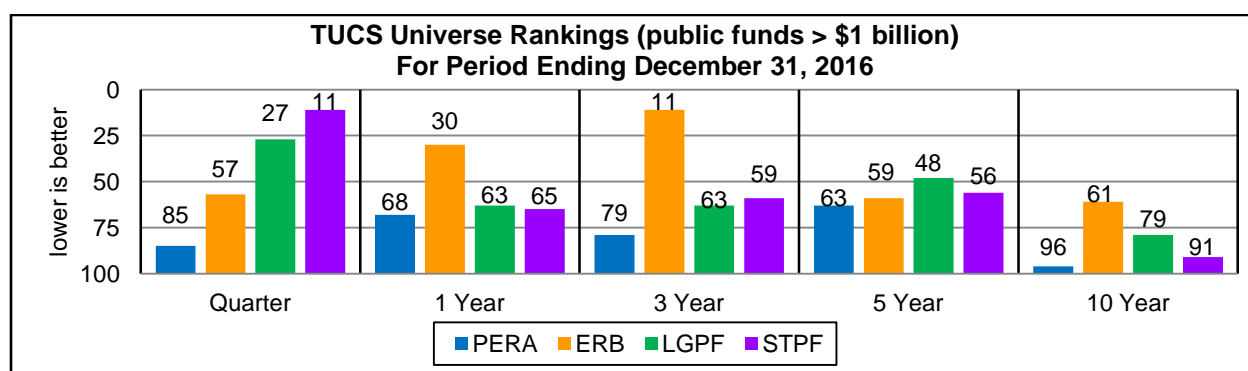
LGPF's private equity portfolio performed below par during the year, earning 7.4 percent net-of-fees against a benchmark of 8.7 percent. However, SIC states this portfolio continues to improve towards market returns as it shrugs off the ill effects of poor management prior to the current council's involvement.

PERA's biggest detractor to returns was its risk mitigation portfolio. The principal design of this \$4 billion portfolio of investment grade fixed income is to provide downside protection and serve as a source of liquidity to pay current benefits. Subsequent to the US election, the 10-year US Treasury bond rose by approximately 50 basis points, and, thereby, reduced the value of this asset category. As a result, the risk reduction portfolio was down 2.5 percent for the quarter of which 2 percent of the losses occurred in the month of November. However, this asset class returned a positive 4.2 percent for the year.

The ERB portfolio's U.S. small/mid cap allocation markedly underperformed its benchmark this year, returning 10.6 percent compared to its 17.6 percent benchmark. During ERB's asset allocation review in June 2016, the agency proposed adding an index to this allocation. The additional index would ameliorate some of the performance issues, and should managers continue to underperform, ERB could move the entire allocation to the index, thus ensuring a return equal to the chosen index.

PERFORMANCE RELATIVE TO PEERS

The Wilshire Trust Universe Comparison Service (TUCS) benchmark service evaluates the performance and allocation of institutional investment assets. The service evaluates New Mexico's investment agencies alongside approximately 50 public funds with more than \$1 billion in assets. The following figure shows gross-of-fees total return rankings for the agencies' large funds for the quarter, one-, three-, five-, and ten-year periods. A lower number (1 is best) denotes better performance when compared to other public funds within a comparable investment universe.



While a useful comparison, it is noted these rankings represent an imperfect measure. Rankings are based on self-reported data and the funds compared within the universe operate under different missions and investment goals. For example, in periods where stock markets are performing exceptionally well, funds that rely on a more diversified and stable approach can lag behind their peers in terms of absolute returns during those periods, even if the approach delivers solid returns relative to return targets.

The permanent funds performed markedly well this quarter, with LGPF ranking in the 11th percentile and STPF ranking in the 27th percentile. However, the permanent funds fell below the median for all periods but the latest quarter, with the exception of LGPF performing slightly above the median for the five-year period. ERB's fund performed particularly well, performing well above the median for the one- and three-year periods, ranking in the 30th and 11th percentiles, respectively. Notably, only ERB's fund ranked above the 50th percentile for the one- and three-year periods. However, none of the funds ranked above the 50th percentile for the ten-year period.

PERA ranked below the 50th percentile for all periods reported. Since April, PERA has been working to transition the portfolio to its new policy targets. However, this process takes 18 to 24 months to implement. In the interim, the PERA fund will be above its target weights in global equities and risk reduction/mitigation strategies, and below its targets for credit-oriented fixed income and real assets. These temporal over- and underweights had a negative impact on the performance of the PERA fund, as a whole, during the calendar year and quarter ending December 31. Similarly, whereas PERA's net investment gain was 0.02 percent (or 2 basis points) for the quarter, its policy index representing the new asset category targets gained 86 basis points. PERA has been working to implement its new portfolio targets such that the fund may enjoy the higher return and lower volatility associated with the updated policy index.

RISK PROFILES

Risk is an inherent component of investing in financial markets. As risk of an investment fund is a function of the strategic asset allocation, it is prudent to keep the risk within tolerant levels to achieve the overall goals of the plan. This report utilizes a few key measures to evaluate the impact that risk plays in an investment portfolio. The table below reports funds' standard deviation, Sharpe Ratio, and beta for the five-year period ending December 31, 2016. This report uses the five-year period as a proxy for the portfolios' risk profiles over the course of a full market cycle.

Risk Metrics*, Five Years Ending 12/31/16

	ERB	PERA	LGPF	STPF
Standard deviation	5.2	6.2	5.9	5.8
Sharpe Ratio	1.6	1.2	1.4	1.4
Beta	0.9	1.2	0.5	0.5

*Net of fees

Standard deviation measures the fund's expected variability (deviation) of returns from the mean return. Investments that are more volatile generate a higher standard deviation. Of the four funds, PERA demonstrated the highest standard deviation, indicating higher volatility relative to the other funds; however, the figure is not markedly different from the permanent funds. PERA

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is in the process of transitioning its portfolio to new policy targets. During the transition period, the PERA portfolio has shown greater volatility than its policy index, which is more diversified.

The Sharpe Ratio measures the risk-adjusted performance of a portfolio. The higher the number, the higher the return-to-risk level.² Typically, a good ratio is 1 or better, a very good ratio is 2 or better, and an excellent ratio is 3 or better. Each of the funds had a “good” Sharpe Ratio for the five-year period (between 1 and 2).

Beta represents the volatility of the portfolio versus the market.³ The permanent funds demonstrated the lowest volatility over the five-year period, with betas significantly less than 1, indicating lower correlation to broad market swings. The beta for the pension funds hovered around 1, indicating that investments generally follow market movements, although PERA’s fund, with a beta above 1 was slightly more volatile than the market.

APPENDIX

The following pages discuss the four investment funds’ performance within the context of their individual objectives and investment strategies, along with input from the chief investment officers.

² An example of a risk free return is a 5-year treasury bond.

³ Beta = 1: portfolio moves with the market. Beta < 1: portfolio is less volatile than market. Beta > 1: portfolio is more volatile than the market.

Public Employees Retirement Association (PERA)

Fund Objective. PERA administers 31 pension plans covering state and local government employees, police, firefighters, judges, magistrates, and legislators to provide secure retirement.

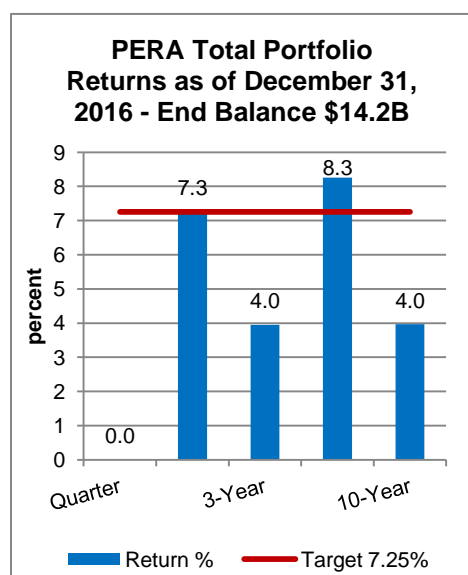
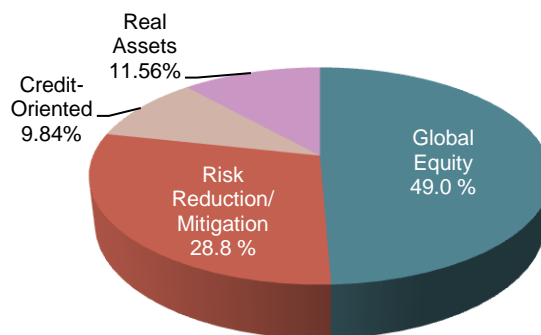
Investment Strategy. PERA operates under a dual mandate. The first is to generate income to pay current retiree benefits, as PERA disburses approximately \$91 million per month, or \$1.1 billion per year. The second mandate is to grow the principal of the PERA fund to pay retiree benefits into the future. These objectives are somewhat in conflict and require PERA to allocate its investable assets across multiple investment strategies, each with different return and liquidity profiles. In other words, PERA diversifies its portfolio to perform across market cycles to prevent the risk of permanent asset impairment while maintaining sufficient liquidity to pay current benefits. PERA also diversifies the duration of its investment horizon. Specifically, over 75 percent of its assets are convertible into cash at a fair value within two weeks. PERA balances the differing mandates through long-term investments that make up the remainder of PERA's portfolio.

In April 2016, PERA adopted a new strategic asset allocation to better meet its ends. The principal changes include: (1) reduction in the target equity exposure by over 10 percent to 43.5 percent; (2) reduction in target core fixed income (herein referred to as the risk reduction and mitigation portfolio) by almost 5 percent to 21.5 percent; (3) increase in target credit investments by almost 10 percent to 15 percent; and (4) increase in target real asset investments by almost 7 percent to 20 percent.

PERA states the new targets balance risks in a way that dampens valuation swings and provides the expectation for better risk-adjusted returns across market cycles. In addition to adjusting its strategic asset allocation in 2016, PERA also lowered its investment return hurdle in July from 7.75 percent to 7.25 percent in order to prevent unnecessary risktaking to meet the higher percent return threshold.

Performance & Current issues. For the calendar year, PERA generated a net return of 7.3 percent, meeting its long-term target. Assets increased from \$13.7 billion one year ago to \$14.2 billion on

PERA Asset Allocation as of 12/31/16



December 31, 2016. While the fund performance was on target for the year, PERA's policy index representing the new strategic asset allocation returned 8.7 percent for the same period. PERA stated the increased diversification in the policy index avoided much of the market volatility associated with Brexit and the US elections. Not only did the policy have a higher return, but also it had lower measured volatility.

For the quarter, PERA experienced unexpected outcomes in November (post-election), with gains in domestic small and mid-cap equities and losses in risk reduction strategies – returns in both categories fell outside the 95 percent confidence intervals predicted by the agency's comprehensive risk management system. PERA has been working to implement its new portfolio targets such that the fund may enjoy the higher return and lower volatility associated with the updated policy index. For the current fiscal-year-to-date, PERA's net return of 3.7 percent is pacing ahead of its new actuarial investment return target.

Educational Retirement Board (ERB)

Fund Objective. ERB administers a defined benefit pension plan for public school and higher education employees.

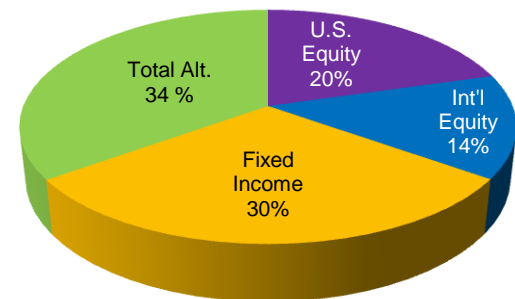
Investment Strategy. As a mature public pension fund, ERB has liquidity requirements to maintain its core function: paying monthly retirement benefits to its beneficiaries. This requirement limits the amount of investment in illiquid, private assets. ERB seeks to benefit from the illiquidity premium offered by private assets such as private equity, real estate, and other real assets. The fund is near the practical limits of its ability to invest in illiquid assets.

ERB seeks to strike the proper balance between return and volatility. In the long run, ERB works to meet its required actuarial return target of 7.75 percent, while balancing volatility to the extent possible. The two objectives of high return and low volatility are naturally in conflict with each other, thus the goal of striking a proper balance. ERB addresses this through structuring a broadly diversified portfolio.

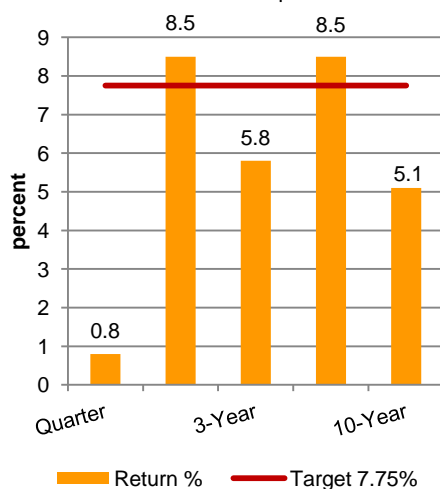
Performance & Current issues. For the calendar year, ERB's investment portfolio returned 8.5 percent, net of fees, exceeding the 7.75 percent actuarial target. Assets increased from \$11.1 billion one year ago to \$11.7 billion on December 31, 2016.

In the last year, ERB's private asset categories of private equity, real estate, and real assets all performed well against their respective benchmarks, with returns at 11.2 percent (8.7 percent benchmark), 12.1 percent (8 percent benchmark), and 10.5 percent (6.2 percent benchmark), respectively. Many other allocations, including the internally managed Core Bonds portfolio, posted at least modest excess performance.

ERB Asset Allocation as of 12/31/16



ERB Total Portfolio Returns as of December 31, 2016 - End Balance \$11.7B



As discussed in the asset class performance section, the portfolio's U.S. small/mid cap allocation markedly underperformed its benchmark, and the agency identified ways to address this issue. While ERB is researching the application of an S&P based index component to this asset class, the agency reports implementation has been delayed due to understaffing.

While ERB's opportunistic credit asset category also underperformed in quarter and one-year periods, ERB expressed less concern over this fact considering the portfolio continues to demonstrate excess returns in longer periods.

ERB expressed concern over the ability to recruit and retain talented investment staff. Currently, the agency has four vacant positions it has been unable to fill. ERB, similar to SIC and PERA, contend they have found qualified people but have difficulty offering competitive salaries. A bill has been introduced this legislative session to address salary issues at ERB.

State Investment Council (SIC)

Investment Strategy. SIC invests the Land Grant Permanent Fund (LGPF) and the Severance Tax Permanent Fund (STPF), and its investment goals are to preserve the permanent endowment funds and to provide future benefits by growing the funds at a rate at least equal to inflation. SIC seeks to manage the funds to ensure future generations receive the same or greater benefits as current beneficiaries, while maximizing current distributions through time to provide current revenue sources to the state's general fund.

Over the last five years, SIC worked to shift the permanent funds' asset allocations to diversify dependency on stocks and bonds, seeking return from sources that are newer to public funds or historically less utilized. SIC substantially filled a new 12 percent allocation to "real return" assets--principally energy, timber, infrastructure, farmland and related assets and strategies; and executed material increases to allocations in real estate and private equity assets. While these shifts in investment strategy have had the side effect of adding to portfolio complexity and investment management fees, SIC recognizes the necessity to achieve adequate long-term rates of return at the lowest volatility levels practical.

Current issues and Updates from the CIO. As with most large institutional investors, SIC recognizes the likelihood that traditional publicly-traded equity and bond market performance will underperform historical averages over the longer run. The major investment consultants used by public funds have cut longer-term return assumptions for stocks to around 7 percent annually against historical annual returns of 9-10 percent, and cut bond returns to 3 percent from historical annual returns of 6+ percent. The council indicates this has produced a substantial challenge for institutional investors like SIC, both in finding and investing in assets outside of stocks and bonds which offer better prospects, and in reducing positions in these familiar investments.

The massive restructuring of the investments at the SIC, which began in 2011, is structurally in place. Most of what remains is for managers to call commitments made for investments in the private asset portfolios and for them to "season." The council will review the asset allocation of LGPF and STPF in fiscal 2017 with the expectation of only minor changes in allocations and portfolio structure. SIC believes the funds are currently structured to perform well in the long term compared against the broad group of public funds.

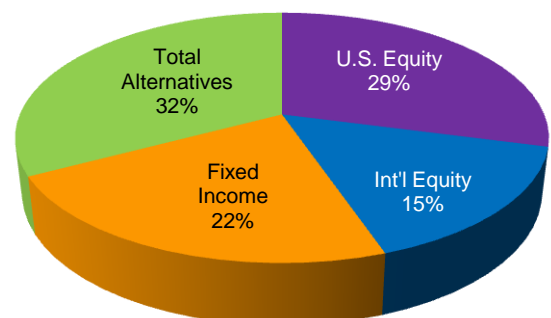
Land Grant Permanent Fund (LGPF)

Fund Objective. The LGPF is derived from sale proceeds of state and federal public lands and royalties from mineral and timber production on state lands.

Performance. LGPF performed well this quarter, exceeding nearly all of its internal policy return targets and its long-term return target of 7 percent for both the calendar year and the five-year period ending December 31, 2016. However, the fund's three-year return fell short of its internal benchmark, returning 4.6 percent versus a 5.2 percent target.

SIC states the LGPF's current asset mix is expected to produce 7.2 percent annually, on average, over longer periods of time versus a 7 percent long term target return.

LGPF Asset Allocation as of 12/31/16



Severance Tax Permanent Fund (STPF)

Fund Objective. The STPF receives contributions from the portion of severance tax proceeds not required for retirement of severance tax bonds.

A portion of the STPF is invested in economically targeted investments (ETIs) that typically perform below-market because the investments are not targeted solely at delivering returns. SIC, as authorized by the Legislature, can justify an ETI's reduced level of expected financial return due to expected economic development benefits the investment is expected to deliver.

Performance. The fund performed notably well this quarter, ranking 11th in the TUCS peer universe. However, the fund ranked below the 50th percentile for all other periods reported. Despite this, STPF returned 7.4 percent this last year and 8.7 percent for the five-year period, exceeding its 6.75 percent long-term target return.

STPF Asset Allocation as of 12/31/16

